

# Taylor Winter

PHD CANDIDATE

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## Summary

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I am currently studying a PhD at the University of Victoria Wellington. My research is in health psychology, focusing on how mood can be influenced by physiological and environmental factors such as the gut-microbiome and experiences of discrimination. Work has led to a broad range of experience in statistical methods including structural equation modelling, multi-level modelling, and Bayesian methods. As part of my study, I have also sought to share some of my statistical knowledge as evidenced by a tutorial article on informed Bayesian analysis, and the development of statistical software to make complex techniques more accesible.

I also work with Stats NZ and Ngāi Tahu providing statistical advice and conducting analytics. My specialty is Bayesian modelling and big data. This has led to me developing skill in reproducible workflows and project management techniques which I can bring to an academic role. Example projects include heading the development of an official statistic on poverty and pipeline development for cellphone data from Spark and Vodafone.

## Employment

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### University of Otago

ASSISTANT RESEARCH FELLOW

2019 - Present

### Statistics New Zealand

SENIOR DATA SCIENTIST

2019 - Present

### Te Runanga o Ngai Tahu

STATISTICIAN

2018 - Present

### Statistics New Zealand

STATISTICAL ANALYST

2016 - 2019

### University of Otago

SENIOR RESEARCH ASSISTANT

2013 - 2016

### Queensland Department of Natural Resources and Mines

PROJECT OFFICER

2013 - 2015

### University of Otago

RESEARCH ASSISTANT

2012 - 2014

## Education

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### Victoria University of Wellington

DOCTOR OF PHILOSOPHY

Wellington

Present

### University of Otago

MASTER OF SCIENCE

Dunedin

2016

## Awards and scholarships

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2018 IPANZ Young Professional Of The Year (Top 3)

Institute of Public  
Administration NZ

2018 Victoria Doctoral Scholarship (Differed)

Victoria University  
of Wellington

2015 Otago Research Master's Scholarship

University of Otago

## Publications

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1. Winter, T, B Riordan, A Surace, and P Jose (In Review). A tutorial on the use of informative Bayesian priors for substance research with minority groups. *Addiction*.
2. Riordan, B, T Winter, J Flett, and DSPJ and T. Conner (In Review). Does the Fear of Missing Out (FoMO) moderate the relationship between social networking use and affect? A daily diary study. *Computers in Human Behavior*.
3. Winter, T, T Conner, and P Jose (In Review). Identifying Profiles of Affective Change: An Ecological Momentary Assessment of Flourishers. *Emotion*.
4. Winter, T, B Riordan, and A Surace (2019). The relationship between hazardous alcohol use and discrimination among Māori in Aotearoa New Zealand. *Addiction*.
5. Surace, A, B Riordan, and T Winter (2019). Do New Zealand sexual minorities engage in more hazardous drinking than non-sexual minorities? *Drug and Alcohol Review*.
6. Pittar, N, T Winter, L Falland-Cheung, D Tong, and J Waddell (2018). Scalp simulation – A novel approach to site-specific biomechanical modeling of the skin. *Journal of the Mechanical Behavior of Biomedical Materials* **77**, 308–313.
7. Falland-Cheung, L, JN Waddell, MS Lazarjan, MC Jermy, T Winter, D Tong, and PA Brunton (2017). Use of agar/glycerol and agar/glycerol/water as a translucent brain simulant for ballistic testing. *Journal of the Mechanical Behavior of Biomedical Materials* **65**, 665–671.
8. Franz, EA, Y Fu, M Moore, T Winter, T Mayne, R Debnath, and C Stringer (2016). Fooling the brain by mirroring the hand: brain correlates of the perceptual capture of limb ownership. *Restorative neurology and neuroscience* **34**(5), 721–732.
9. Tong, D, T Winter, J Jin, A Bennett, and J Waddell (2015). Quantification of subconcussive impact forces to the head using a forensic model. *Journal of Clinical Neuroscience* **22**(4), 747–751.
10. Winter, TJ and EA Franz (2014). Implication of the anterior commissure in the allocation of attention to action. *Frontiers in Psychology* **5**.

## Presentations and posters

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### Using overseas surveys to produce reliable models of sexual minorities

NEW ZEALAND POPULATION CONFERENCE, WELLINGTON

2019

### Alcohol use disparities among gender and sexual minorities in New Zealand (Poster)

COLLABORATIVE PERSPECTIVES ON ADDICTION, RHODE ISLAND

2019

### Iwi data tool using integrated data and R Shiny

IWI DATA CONFERENCE, CHRISTCHURCH

2017

### Using data to support a collective impact model of Maori potential

POPULATION ASSOCIATION OF NEW ZEALAND CONFERENCE, CHRISTCHURCH

2016

### The effect of motherhood on income

NEW ZEALAND ASSOCIATION OF ECONOMISTS CONFERENCE, WELLINGTON

2016

### A machine learning approach to classifying life course outcomes

LONGITUDINAL AND MULTIVARIATE ANALYSIS NETWORK (STATS NZ), WELLINGTON

2016

### Methodology for comparing incomes between parents and non-parents

STATISTICAL METHODS SEMINAR (STATS NZ), WELLINGTON

2016

### Inter-hemispheric inhibition in the autistic brain

NEUROETHICS SEMINAR, DUNEDIN

2014

## Skills

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- Languages such as SQL, R, Python, SAS, SPSS Syntax, Bash
- Structural equation modelling and causal analysis
- Bayesian statistics, using *brms* in R (Stan backend)
- Machine learning techniques such as random forests and neural nets
- Strong background using big data, i.e. the Integrated Data Infrastructure (IDI) at Stats NZ
- Knowledge of Tikanga Māori